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PATENT
CUSTOMER NUMBER, 22,852
Attorney Docket No. 01064.0011-04000

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

Richard LEVY

Serial No.: 09/357,957

Filed: July 21, 1999

For: LUBRICANT COMPOSITIONS AND
METHODS

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) Group Art Unit: 1714
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) Examiner: M. Medley
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Commissioner for Patents and Trademarks
Washington, DC 20231

Sir:

APPELLANT'S REPLY BRIEF PURSUANT TO 37 C.F.R. § 1.193(b)(1)

Appellant submits the following reply brief in triplicate pursuant to 37 C.F.R. §1.193(b)(1) and a separate Request for an Oral Hearing pursuant to 37 C.F.R. § 1.194 with the fee required by 37 C.F.R. § 1.17(d).

The Examiner's Response to Appellant's Argument That Neither Brannon-Peppas Nor Levy Teach Appellant's Invention of Claims 29, 35 or 42

The Examiner's Answer lists the various grounds of rejection of the application, specifically referring to the rejection of "claims 29, 35 and 42 . . . under 35 U.S.C. §102(b). . . Paper No. 10, dated July 5, 2001." (Examiner's Answer p. 4, lines 8-9). The July 5 Office Action applied Brannon-Peppas and Levy, United States Patent No. 4,985,251 to reject these claims.

In responding to Appellant's arguments regarding claims 29, 35 and 42 the Examiner argues "the fact that applicant [sic] has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious." (Examiner's Answer, sentence bridging pp. 4 and 5) (emphasis added). The Examiner then cites Ex parte Obiaya, 227 U.S.P.Q. 58, 60 (Bd. Pat. App. & Int. 1985) to support her obviousness rejection. An analysis of Obiaya will show that the decision addressed a 35 U.S.C. § 103 obviousness rejection of the Obiaya claims.¹

The Examiner goes on to find that "claims 29, 35 and 42 are anticipated by the teachings by Admitted Prior Art, Levy, 4,985,251 combined with Brannon-Pappas [sic, Peppas]," and finds "in response to applicant's [sic] arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references." (Examiner's Answer, p. 5, first and second full paragraphs) (emphasis added) (citations omitted).

Clearly, this illustrates the thrust of the Examiner's rejection of claims 29, 35 and 42 amounts to an obviousness rejection under 35 U.S.C. §103 and not an anticipation rejection under 35 U.S.C. § 102(b) since the Examiner repeatedly on pp. 4 and 5 of the Examiner's Answer addresses the claims as "obvious," combined the teachings of Brannon-Peppas and Levy, and argued the Appellant could not show "nonobviousness. . . where the rejections are based on combinations of references."

1 Importantly, the Examiner did not cite Obiaya in the July 5, 2001 Office Action nor in any other Office Action during the prosecution of this application.

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A 35 U.S.C. §102 rejection, sometimes referred to as "anticipation," cannot employ multiple references since a "finding of anticipation requires that all aspects of the claimed invention were already described in a single reference. . . . If it is necessary to reach beyond the boundaries of a single reference to provide a missing disclosure of the claimed invention, the proper ground is not § 102 anticipation, but §103 obviousness." Scripps Clinic v. Genentech Inc., 927 F.2d 1565, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991) (citations omitted) (emphasis added). Here the Examiner has employed the secondary reference to supply elements lacking in the principle reference she relies on to make her rejection. Importantly, the Examiner's Answer repeatedly employs the criteria for obviousness in rejecting claims 29, 35 and 42 by combining the teachings of Brannon-Peppas and Levy, and attempting to rebut Appellant's distinctions of these references by finding that Appellant has attempted to show nonobviousness by attacking the references individually where the rejections are based on combinations of references.

The Examiner has made a new ground of rejection under 35 U.S.C. §103, and in response to this rejection, appellant has submitted an amendment under 35 U.S.C. §1.116 to address the combination of teachings of Brannon-Peppas and Levy. Appellant has also attached a substitute copy of the claims on appeal that incorporate these amendments. The amendment under 37 C.F.R. §1.116 explains the various amendments and the support for the amendments in the written description. Briefly, however, the amendment to claim 29 defines the lubricant compositions based on petroleum oil or a two-mol ethoxylate of isostearyl alcohol as a substantially anhydrous composition. Neither Brannon-Peppas nor Levy teaches this aspect of Appellant's

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invention, nor would a person with ordinary skill in the art find that the references in combination with one another fairly suggest this composition.

Appellant has found that when the lubricating composition is substantially anhydrous, the superabsorbent polymer nonetheless remains combined with the lubricant. Prior to the present invention, a person with ordinary skill in the art had no awareness of this phenomenon nor did the prior art suggest it in any manner. Appellant also discovered, as indicated on pp. 29-30, that after wetting, the superabsorbent polymer takes up the lubricant. Swelling the superabsorbent polymer with water allows the lubricant to enter into the superabsorbent polymer. Appellant has also found that upon removal of water, the superabsorbent polymer retains the lubricant and that upon applying pressure to the superabsorbent polymer combined with lubricant, it will reversibly release the lubricant as a film, drop or droplets.

The claims of the invention also cover other aspects of the invention where lubricants other than petroleum oil lubricants or a two-mol ethoxylate of isostearyl alcohol are not employed. The claims cover these lubricant compositions that either contain water or are substantially anhydrous.

The Examiner also focuses on the language in claims 29, 35 and 42 directed to the optional lubricant additive. Claim 29 and claim 42 specifically state that where the material for decreasing friction comprises water, the lubricant additive is not optional, but mandatory, i.e., these claims specify "water containing a lubricant additive." The other materials for decreasing friction, however, may contain a lubricant additive as an optional ingredient, but water as a material for decreasing friction requires a lubricant additive.

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The Examiner's Rejection Based on Geursen U.S. 5,534,304
(PCT Counterpart, WO 93/18223)

The Examiner argues that even though Appellant attempts to distinguish Geursen based on an analysis that shows the reference only contains examples of superabsorbent polymers that absorb at most about 45 times their weight in water, Appellant's claims do not recite limitations that point out this distinction. On the contrary, each of the claims on appeal sets out "a superabsorbent polymer that absorbs greater than about 100 times its weight in water" as part of the lubricating composition of matter of Appellant's invention.

The Distinction of the Invention From the Art of Record

Appellant distinguishes the references applied in the 35 U.S.C. § 103(a) rejections for the same reason as set forth in the Brief in Chief, and summarizes the distinctions as follows:

Brannon-Peppas describes how superabsorbent polymers fit into the evolution of absorbent polymeric materials (Brannon-Peppas, p. 6) and the kinetics of swelling of absorbent polymers (pp. 233, 238), and gives examples of superabsorbent polymers that absorb greater than 100 times their weight in water.

Levy describes a biologically active material containing insecticides and herbicides inter alia, comprising a superabsorbent polymer in combination with various insecticides and similar materials. One of these materials comprises Arosurf® MSF, a two-mol ethoxylate of isostearyl alcohol. The reference also describes this compound as a "non-petroleum oil" (Levy, column 13, line 3, column 19, line 50). Herbicidal materials used in the composition include "petroleum derivatives" (Levy, column 13, line

63). Levy discloses various superabsorbent polymers in combination with insecticides or herbicides, but, neither Levy nor Brannon-Peppas describe or suggest the possibility of combining superabsorbent polymers with petroleum lubricants or a two-mol ethoxylate of isostearyl alcohol in a substantially anhydrous form as described in the amended claims submitted with this Reply Brief.

Sayad et al., U.S. Patent No. 3,336,225 ("Sayad") teach the use of water-soluble acrylic polymers in combination with an aqueous soap solution in a method for reducing friction on a conveyor. Sayad does not teach superabsorbent polymers. If Sayad did contain this teaching, the Examiner would not have to resort to combining the teachings of Sayad with other references that specifically describe superabsorbent polymers.

Hopkins, Jr. et al., U.S. Patent No. 5,362,766 ("Hopkins") forms a "matrix" around particles of a superabsorbent polymer where the matrix consists of cellulose acetate, methacrylate polymers, polyvinyl acetate copolymers, and combinations of the polymers. A matrix, by definition encloses or embeds something either for protection or study. Hopkins plasticizes the matrix with glycerin in order to give it some flexibility. Hopkins, however, fails to teach any utility for the matrix that envelops the superabsorbent polymer particles, only noting that the matrix has good absorbent and retention properties and immobilizes the superabsorbent polymers. The reference also indicates that the matrix materials "can be made porous as would be desirable for filtration membranes." (Hopkins, column 1, line 66, column 2, lines 7-9). The reference constitutes nonanalogous art in that it fails to teach anything about the formation of a lubricant or the use of the disclosed material for the purpose of lubrication.

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Geursen et al., U.S. Patent No. 5,534,304 ("Geursen") does not contain an enabling disclosure of how to manufacture a superabsorbent polymer in combination with a lubricant where the superabsorbent polymer absorbs greater than 100 times its weight in water. Even though Geursen describes superabsorbent polymers that have swelling values ranging from 50 to 700 or higher, Geursen has no enabling disclosure on how to manufacture a lubricant combined with these polymers. The disclosed aqueous polymerization of the monomer into a superabsorbent polymer appears to prevent Geursen from obtaining a polymer that absorbs greater than about 100 times its weight in water. An analysis of the examples (as set out on pp. 14-17 of Appellant's Brief in Chief) shows the production of superabsorbent polymers that absorb only about 45 times their weight in water, less than one-half of the lower limit of Appellant's claimed superabsorbent polymers. Even though the prior art might disclose superabsorbent polymers that absorb greater than 100 times their weight in water, Geursen did not know how to combine a lubricant with these polymers as demonstrated by the Geursen disclosure. Geursen therefore does not contain an enabling disclosure of how to manufacture a superabsorbent polymer that absorbs greater than 100 times its weight in water in combination with a lubricant.

The references to Schey and Booser merely describe lubricant technology that Appellant already disclosed in the last paragraph on page 18 of the written description.

The References Provide No Motivation to Combine Their Teachings

The references provide no motivation for a person of ordinary skill in the art to combine or modify their teachings and arrive at appellant's invention, nor do they teach

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the desirability of the combination, or that an advantage or expected beneficial result would have followed from their combination. M.P.E.P. §§ 2143, 2143.01, 2143.02, and 2144, and cases cited therein.

Specifically, Brannon-Peppas, Levy, Sayad, and Hopkins do not contain any teachings related to the lubricant arts, and a skilled artisan would not find any motivation in them to combine their teachings with each other, or the other references of record. These references amount to non-analogous art.

Conclusions

Appellant requests the Board to reverse the Examiner in all respects in view of the reasons set forth in this Reply Brief and Appellant's Brief in Chief, and remand the application to the Examiner for the issuance of a Notice of Allowance. If entry of this Reply Brief requires payment of a fee, which this Reply Brief does not account for, Appellant's attorneys request payment of any fee due from their deposit account no. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: July 22, 2002

By: 

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(9) Appendix

Claims on Appeal

29. (Amended Twice) A lubricating composition of matter consisting essentially of a superabsorbent polymer that absorbs greater than about 100 times its weight in water combined with a material for decreasing friction between moving surfaces wherein said material for decreasing friction is a petroleum oil grease, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant which is selected from polymerized olefins, organic esters, silicones, polyphenyl ethers, silicates, chlorinated aromatics, fluorocarbons, and polyglycol lubricants, or greases thereof, or a soap, and a petroleum oil or an isostearyl alcohol containing two oxyethylene groups wherein said lubricating composition is substantially anhydrous where said material for decreasing friction is a petroleum oil or an isostearyl alcohol containing two oxyethylene groups, and mixtures thereof.

30. The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a petroleum oil lubricant or grease thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure

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additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

31. The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant, wherein said solid lubricant is an inorganic compound, carbon, or metal that provides barrier-layer lubrication, or mixtures thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

32. (Amended Once)The composition of claim 31 where said solid inorganic lubricant is molybdenum disulfide, cobalt chloride, antimony oxide, niobium selenide, tungsten disulfide, mica, boron nitride, silver sulfate, cadmium chloride, cadmium iodide, borax, basic white lead, lead carbonate, lead iodide, asbestos, talc, zinc oxide, carbon, babbitt, bronze, brass, aluminum, gallium, indium, thallium, thorium, copper, silver, gold, mercury, lead, tin, indium, or the Group VIII noble metals or mixtures thereof.

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33. The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid organic lubricant, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

34. The composition of claim 33 where said solid organic lubricant is a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

35. The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is water containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

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36. The composition of claim 29 consisting essentially of a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is an oil or greases thereof and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

37. The composition of claim 29 consisting essentially of a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

38. The composition of claim 37 where said solid lubricant is graphite, molybdenum disulfide, cobalt chloride, antimony oxide, niobium selenide, tungsten disulfide, mica, boron nitride, silver sulfate, cadmium chloride, cadmium iodide, borax, basic white lead, lead carbonate, lead iodide, asbestos, talc, zinc oxide, carbon, babbitt, bronze, brass, aluminum, gallium, indium, thallium, thorium, copper, silver, gold,

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mercury, lead, tin, indium, the Group VIII noble metals, a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

39. The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a phosphate, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

40. The composition of claim 39 where said material for decreasing friction is zinc phosphate, iron phosphate or manganese phosphate, or mixtures thereof.

41. The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a fatty oil, fatty acid or wax, or mixtures thereof and wherein

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said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

42. (Amended Once) The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is said synthetic oil lubricant, or two-mol ethoxylate of isostearyl alcohol, or greases thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

43. The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a soap, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant,

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rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

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